

Texas Needs To Prepare For A 'Megadrought,' State Climatologist Warns

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Published July 10, 2020 at 5:01 AM CDT



Julia Reihs / KUT

The state climatologist says a megadrought will make the climate of East Texas more like West Texas (seen here), and the climate of West Texas more like that of New Mexico.

Texas is no stranger to droughts. From the bone-dry stretch of the 1950s, the state's longest drought, to the fiery months of 2011, the state's single driest year, droughts have shaped Texas' culture and economy.

But, according to the state climatologist of Texas, we ain't seen nothing yet.

John Nielsen-Gammon, who is also a professor of atmospheric sciences at Texas A&M University, is the lead author of a new [paper](#) that forecasts the arrival of more extreme droughts through this century. These could include decades-long "megadroughts," which have not afflicted the state for a thousand years.

"There's a huge question about whether we should be talking about droughts as a recurring phenomenon or as a one-time event," Nielsen-Gammon says. "I think we should be talking about droughts as a recurring phenomenon."

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Earth's Future. "Because a drought is something that happens temporarily and goes away. And we're talking about something that is effectively going to be permanent – at least in terms of human lifespan."

The bottom line, according to climate models, is that an increasing aridness will grip the state. Soil will dry up and not be able to support the same amount of agriculture and plant and animal life. Nielsen-Gammon says it will make the climate of East Texas more like that of West Texas, and the climate of West Texas more like that of New Mexico.

There will be less water in the reservoirs, and without new ways of storing water, Texas will no longer be able to support human activity. So, he says, state water planners should be preparing for it now.

Water Planning In Texas

Texas manages its water resources based on what the paper calls a "rear-view mirror approach."

The [state water plan](#), updated every five years, aims to prepare Texas for a drought like the seven-year-long "drought of record" that took place in the '50s. What it does not do is consider how climate change could further drain water supplies.

"For example," the paper says, "the state plan reports only a 3% decrease in surface water availability from 2020 to 2070," while climate change could bring a much steeper drop.

Climate change "means our margin of safety of our water supplies becomes smaller and smaller unless we adapt our planning to keep up with it," Nielsen-Gammon says.

That means groups that use and distribute water in the state, like agricultural interests and local and regional water authorities, should use tools for forecasting the impacts of climate change on their water supply.

Nielsen-Gammon says climate models are improving when it comes to predicting what

"It won't generally be at the level of a particular aquifer impact or a particular stream, but you can at least tell basically which way the winds are blowing," he says.

Planning Takes Money And Will

The paper points to the City of Austin as an example of how one local government can prepare for a drier future.

After the drought of 2011, Austin decided to create a plan to ensure it had enough water for the next 100 years. It incorporated the increasing likelihood of drought driven by climate change into the process.

The result is the city's "[Water Forward: Integrated Water Resource Plan](#)." It recommends everything from increased water conservation to the creation of an underground aquifer water-storage system to tackle climate change.

But, planning with that level of detail and sophistication takes two things that can be hard to find in Texas: money and a willingness to accept the reality of climate change.

Nielsen-Gammon says groups without the economic resources of a city like Austin should still prepare "based on the more general projections of somewhat drier conditions and perhaps allow for some additional safety margin taking account what climate change might produce for them."

When it comes to the acceptance of climate science, he says he thinks it's starting to happen in Texas. The main reason for that is not a drought, but a flood: the one caused by Hurricane Harvey.

"We simply can't ignore those sorts of out-of-the-box natural disasters," he says. "Effectively, certain types of natural disasters are becoming more and more likely because of climate change."